Novick

January 10, 1952

Thanksgiving m

Thanks very much for your so prompt service. If I waited another 24 hours, I could tell you how the experiment was working out.

After a couple of months of doing very little but writing, I'm busy again with what looks like an interesting lead on the mechanism of sex in K-12. Over a year ago, Esther picked up some mutant strains that were infertile with each other, but crossed with various other stocks. Cavalli in a recent letter asked some questions about heterothallism that led me to look over our old data, and do a few new experiments that brought everything in line with a simple concept. The series of cultures 679-680; Y10; W-1177 (? 679, that's why) carries a "mutation" F^- in contrast to the wild type F^+. $F^+ \times F^+$ and $F^+ \times F^+$ are fertile, but $F^- \times F^-$ is not. We have a few F^- stocks both in BM- and TLB_1-; most are F^+. The clincher is that if F- and F+ are grown together (both BM-) and then the mixture is plated with a TLB_1- F-, the F- X F- cross proceeds (as determined by appropriate markers). The working hypothesis is that the F+ secretes a "hormone" needed for mating, and that F- X F- is ordinarily infertile owing to the absence of the "hormone". We are doing tests now by way of growing F- parents on filtrates of F+ cultures, etc. Vigorous aeration during growth was early observed to interfere with recombination; there is a possibility that this would be related to the production of F+ substance. So far, we have not yet done the essential experiments to show that F+ substance can be separated from F+ cells to stimulate F- x F- crosses, and until this is done the whole picture is insecure.

Vague stories have been floating in about Vogt-Delbruck's work on recombination, but I haven't heard anything specific at all, mainly for geographical reasons, I suppose. Did you hear anything about it from Max when he whizzed through?

Unless you guys are willing to come up here first, we should be seeing you next in about six weeks. What's your new phone number?

Yours sincerely,

Joshua Lederberg